

**CLAIMS:**

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1. A method for authenticating a hardcopy document, comprising the steps of:

5 recording in a memory a scanned representation of the hardcopy document at a selected resolution;

generating lossy compressed image data with the scanned representation of the hardcopy document;

10 producing an authentication token with the lossy compressed image data; the authentication token including one of encrypted image data and hashed encrypted image data; the hashed encrypted image data including the lossy compressed image data and an encrypted hash of the lossy compressed image data; and

15 arranging in the memory the scanned representation of the hardcopy document with a digital encoding of the authentication data for rendering at a printer a signed hardcopy document.

2. The method according to claim 1, further comprising the step of verifying the signed hardcopy document by:

20 recording a scanned representation of the signed hardcopy document;

decoding the authentication token from the scanned representation of the signed hardcopy document;

authenticating the lossy compressed image data using one of the encrypted image data and the hashed encrypted image data; and

25 decompressing the authenticated lossy compressed image data for comparison with the signed hardcopy document to determine whether the signed hardcopy document is authentic.

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3. The method according to claim 2, further comprising the step of visually comparing the signed hardcopy document with the authenticated lossy compressed image data.

4. The method according to claim 2, further comprising the step of visually comparing the signed hardcopy document with a printed hardcopy document of the authenticated lossy compressed image data.

5. The method according to claim 2, wherein said step of producing an authentication token is performed with a private key and said step of authenticating lossy compressed image data is performed with a public key.

6. The method according to claim 1, further comprising the step of encoding the authentication token in a low intensity background pattern.

7. The method according to claim 1, further comprising the step of encoding the authentication token in embedded data.

8. The method according to claim 7, wherein said encoding step encodes the authentication token in a halftone pattern.

9. The method according to claim 8, wherein said encoding step encodes the authentication token in a hyperbolic halftone pattern.

10. The method according to claim 8, wherein said encoding step encodes the authentication token in a serpentine halftone pattern.

11. The method according to claim 7, wherein said encoding step encodes the authentication token in data glyphs.

12. The method according to claim 1, wherein said step of generating lossy compressed image data loses document formatting contained in the scanned representation of the hardcopy document.

13. The method according to claim 12, wherein said step of generating lossy compressed image data further comprises the step of compressing the scanned representation of the hardcopy document by identifying exemplars and







